

The Ecologist Digest

Nuclear Power: Bombs, Accidents, and the Arms Race

Safety questions hang over ageing reactors, Fred Pearce, *New Scientist*, 5 August 1982.

The Nuclear Installations Inspectorate (NII) is taking a very close look at the safety of Britain's Magnox nuclear power stations — the first generation of stations, now reaching the end of their design lives. The move apparently follows a decision by the Central Electricity Generating Board (CEGB) to keep the stations open for 10 years or more beyond the end of their intended lives. The NII now faces a difficult decision on how far it should demand that the Magnox stations be brought up to the safety standards that will be set for the pressurised-water reactor proposed for Sizewell, Suffolk. There have already been problems with bellows on the pressure circuits at Magnox reactors. They have caused shutdown at the Bradwell, Berkeley and Dungeness stations this year. The NII accepts that it will not be able to impose safety standards for the Magnox reactors as high as the demands it is making of the new Sizewell station. But it will tell the CEGB to use the "best practical means" to improve safety. Continued operation of the Magnox reactors puts off the day when the board has to pay for "decommissioning" the stations. The CEGB revealed in its annual report, that the full cost of decommissioning each station could be as much as £270 million. The CEGB refuses to say when the first Magnox stations may close. The annual report notes that "these plants will reach the end of their working lives when the cost of maintaining them at the very high operational and safety standards could no longer be justified." But the government's White Paper on radioactive waste management, published in late July, says no plants are now expected to be decommissioned for at least 10 years.

Billions sought to compensate A—test victims, Joyce Egginton, *The Observer*, September 19th 1982. Almost 30 years after nuclear weapons were tested in the air over Nevada, hundreds of Americans who lived in the direct path of the fallout have gone to court to sue the Federal Government for thousands of millions of dollars-worth of damage to their health and livelihoods. Their case alleges that the Govern-

ment was deliberately negligent in failing to warn them to radiation dangers it knew existed. Many of the 1,192 plaintiffs are suffering from terminal cancer. Others are the next-of-kin of those who have died from radiation — related diseases, such as leukaemia and thyroid cancer. At the time of the tests all of them lived in sparsely populated Mormon communities scattered across the desert of southern Utah and northern Arizona. For almost a generation the fall-out victims suffered in silence, unaware of how many thousands of other cancer cases were developing in their area. The implications of the case, which is expected to last three months, are enormous. It will lead to hundreds more claims from some of the 22,000 former servicemen who took part in the Nevada tests, from uranium miners in the area (many of them American Indians who had no understanding of the dangerous radiation to which they were exposed) and from workers in some of the early atomic plants. The rate of cancers, birth defects and miscarriages among these people is now much higher than the national average, and the difference is especially pronounced among the litigants in the present case. Almost all of them are Mormons who led a rural existence, in total abstinence from tobacco, alcohol and caffeine — a life-style long linked to the virtual absence of cancer cases. There has been no government compensation for any of the civilian victims. But earlier this year it leaked out that the widows of a dozen or so Army veterans involved in the Nevada tests had received settlements, and this has given impetus to the present trial. Another factor was the recent decision by Federal Judge A. Sherman Christensen to dismiss his own verdict of 26 years ago in a suit filed by some Utah sheep ranchers, who alleged that their flocks had been damaged irretrievably from fallout in the early Nevada tests. The ranchers lost their original suit, but on the basis of documents and testimony which have come to light recently Judge Christensen has ordered a new trial, ruling that in 1956 the Federal Government had deliberately suppressed evidence, pressured witnesses, and 'perpetrated a fraud on the court.'

Nuclear accidents more likely than experts thought, *New Scientist*, July 15th 1982.

Serious accidents at nuclear power stations in the US were much more likely during the 1970s than the experts thought. A new look at some old data about breakdowns at nuclear reactors between 1969 and 1979 shows that the experts' assessment of the chances of serious accidents happening at nuclear power stations were as much as 100 times too

optimistic. Nuclear engineers at the government's Oak Ridge National Laboratory have arrived at new estimates, which put the likelihood of an accident in which a reactor's uranium core is at least partially damaged at once every eight or even every three years (assuming 72 reactors in the US). In colder numbers, the chances of such a "core-melt" accident are between 1.7 and 4.5 per thousand reactor years. This estimate is much more worrying than the figures in the influential 1975 Rasmussen report, written by Norman Rasmussen of MIT. Rasmussen's estimate of the probability of a "core melt" was one in 20 000 reactor years.

Breeder Wins Exemption from Licensing Procedures, Eliot Marshall, *Science*, August 20th, 1982.

Persistence pays, the Reagan Administration has learned in its campaign to get an exemption from regular licensing procedures for work on the sodium cooled fast breeder reactor to be built on the Clinch River in Tennessee. The Nuclear Regulatory Commission (NRC) had twice turned down the Department of Energy (DOE) when it asked for an exemption in March and June 1982. On the third try, on 5 August, the DOE got its way, winning permission to start construction before the plant has been licensed for safety. The reversal came about because the newest Reagan appointee to the NRC, James Asselestine, changed his vote from nay to aye, allowing for a vote of 3 to 1 in favour of the Administration's request. Congress will vote later this year on appropriations for this project, whose cost is estimated to be over \$3.5 billion, up from an original estimate in the early 1970's of around \$700 million. Had the NRC denied the exemption for construction work, it would have given wavering congressmen a convenient reason for cutting the breeder from the budget. The sceptics might have argued that the Administration's own licensing authority, the NRC, could not be persuaded to endorse work on the breeder, so why should Congress go along? Now it will be impossible to find shelter in that procedural thicket, and congressmen will have to confront the issue more directly.

Assembly votes to stop nuclear dumping at sea, Leonard Doyle, *The Guardian*, September 9th, 1982.

EEC environmentalists have won an important victory when the European Parliament voted to stop the dumping of nuclear waste at sea. By 54 votes to 50, with 4 abstentions, MEPs called for tough legislation. Members said that using the sea as a nuclear dumping ground was "an irresponsible criminal act" against the environment, and sea polluted by radioactive material could not be regenerated. Nuclear waste dumping at sea may be cheaper than disposal on land but the long-term costs were not being calculated, MEPs said. Mr Etienne Davignon, the EEC Industrial Affairs Commissioner, told the Parliament that whatever way it voted, the commission felt legislation was unnecessary.

40 Nuclear 'sites' are named, Jonathan Davis, *The Times*, September 16th 1982.

A list of more than forty locations which Britain's electricity authorities are said to have been secretly considering as sites for nuclear power stations has been issued by the Council for the Protection of Rural England (CPRE) and the Suffolk Preservation Society. Although the list was promptly dismissed as misleading by the Central Electricity Generating Board (CEGB), the two groups hope that publicizing what they feel is a reasonable guide to the possible scale of future nuclear operations will encourage more people to attend next year's public inquiry into the board's plans to build Britain's first pressurized water reactor (PWR) type of nuclear power station. The list includes sites at Portskewett, Aberthaw and Cardigan Bay, in Wales, Fawley, in Hampshire, Orfordness, in Suffolk, Cliffe Marsh, in Kent, Killingholme and Holderness, in north-east England, Lune Forc and Much Hoole, in the north-west, and inland sites at Ironbridge, Didcot, Connah's Quay and Denver. The Suffolk Preservation Society claimed that the list emanated from a "highly confidential CEGB document. A CEGB spokesman said that the list appeared to be based on one that had been prepared five years ago for the government-appointed Watt committee on energy. Several of the sites had since been ruled out.

US 'may drop nuclear bombs on Britain', Richard Evans, *The Times*, July 20th, 1982.

By the year 2000 the United States will be just as likely to drop a nuclear bomb on Britain as the Soviet Union, according to a leading defence analyst. Professor John Erickson, director of defence studies at Edinburgh University and president of the Association of Civil Defence and Emergency Planning Officers, said that the nuclear threat from the other side of the Atlantic will materialize if the United States pulls its forces out of Europe. "In the next 20 years the strategic environment will change and it may well be our need for protection will not be from Russian but American missiles. If America pulls out of Europe, Europe will become expendable. They will not be willing to allow the Russians to have Britain's command, control and communication facilities. In these circumstances the Americans will bomb us."

Hard Rock disguised likely casualties, Richard Norton-Taylor, *The Guardian*, September 17th 1982.

The plans for the Hard Rock civil defence exercise were manipulated to play down the extent of the casualties Britain could expect in the event of a nuclear attack, according to Mr Robin Cook, Labour MP for Edinburgh Central. He said that the plans show that the decision by about 100 local authorities to boycott the exercise was right. The decision forced the Government to cancel the exercise. The assumption in previous civil defence exercises that nuclear warheads would be targetted on the Clyde submarine base were dropped. According to an

article in the *New Statesman*, the targets for nuclear attack in the Hard Rock exercise had been changed by Whitehall to make them more politically acceptable. The nuclear attack on Britain was scaled down to 54 weapons, a quarter of the level previously assumed. The author of the article, Mr Duncan Campbell, also says that original references to the flight of refugees from the cities were toned down and references to civil disorder and demonstrations were deliberately kept vague.

Chemicals, Drugs, Health and Pollution

Cancer threat to California's water supply, *New Scientist*, August 5th 1982.

Water contaminated by a pesticide may be endangering up to 200 000 people in California. A study from the state's health services department links the pesticide dibromochloropropane (DBCP) with deaths from stomach cancer, and many wells in California carry residues of the chemical at levels above the recommended safety limit. More than 400 tonnes were injected into Californian soil to combat nematodes, a source of fruit trees and vegetables. Many private wells are still contaminated with the chemical at levels 50 or 60 times above the state's recommended safety limit. And DBCP will remain in the grounds for another 20 years, claim health officials. The two-year study by the health services department is the result of a directive from the state legislature. It details deaths from cancer among 1219 people in Fresno County during the 1970s. Researchers compared deaths from six types of cancer to the level of DBCP in the victims' drinking water. At "high" levels of contamination of drinking water (one part per billion and above), the rate of deaths from stomach cancer was twice that among people who exposed to low levels of DBCP (below 0.05 ppb). There was also an apparently increased rate of lymphoid leukaemia in both sexes, and of oesophageal cancer among males aged 40 to 60. There was no significant link between level of exposure to the chemical and cancer of the liver, breast or kidney. In all, some 10,000 wells in a belt of land that stretches almost 1000 kilometres south from Sacramento are affected. The health services department estimates that about 100 000 people, including 50 000 in Fresno County, have contaminated drinking water. John Gaston, head of sanitary engineering for the health services department, told *New Scientist*, "These people have three choices. They can use bottled water, install carbon filters, or say 'To Hell with it'."

Acid rain falling throughout Britain, Tony Samstag. *The Times*, August 20th, 1982.

Acid rain is falling in Britain, according to a

preliminary report commissioned by the Department of the Environment; and in some regions its severity is thought to be "of the same order as in the high input areas of Scandinavia and North America". From 1978-90, Scotland, northern England, the East Midlands and parts of southern England and Wales were surveyed and maps of acidity drawn. "In the area surveyed the minimum values were pH 4.7 and the most acid rain was found at two sites in southern England with a hydrogen ion concentration (equivalent to) pH 4.1." The lower the pH the greater the acidity: a rough, though far from definitive, measure of acid rain is that with a pH value below 5.6. Overall, the most consistently high readings were taken in parts of Cumbria, the west central Highlands and southern uplands of Scotland. Among the review group's nine recommendations are for more measurements in southern England, most of Wales and in Northern Ireland to complete the picture of rain composition in the United Kingdom; "regular (e.g., annual) meetings between researchers and regular reporting of data and analyses . . . essential to ensure valid data", and more effort "to assess the importance of rain effects on the environment."

Cotton disease 'affects one worker in five', Frances Gibb, *The Times*, August 17th, 1982.

One in five cotton-spinning workers suffers from a crippling, progressive and incurable disease called byssinosis, one of Britain's most widespread but little known industrial diseases. Steadfastly ignored by factory inspectors, employers and trade unions, it has none the less been running at epidemic proportions in Lancashire mill towns for more than a century. Its true extent, with more than 3,000 confirmed sufferers and another 3,000 estimated, was highlighted in a BBC1 television documentary, "Dust to Dust", which says that one worker a week who dies has the disease. About £30m has so far been spent by mill companies and the Government in compensation and disability pensions and among the surviving 40 mills the disease is likely to spread as cheaper cottons are used. On latest figures, the programme makers say, an average of three cases of byssinosis are diagnosed a week, and about £50,000 is paid out of court in compensation each week. At least 500 former workers are severely crippled. Yet in spite of successive reports and inquiries into the disease, nothing has been done by the factory inspectors, employers or trade unions. The current "safety standard" allows for 0.5 milligrams per cubic metre of air, and even at this level one worker in 10 can expect to get byssinosis. Half the mills still operating do so at levels in excess of this, some well in excess but, since 1945, there has been only one prosecution by the factory inspectors and the firm was fined £25. In 1932 a government committee proposed annual medical examinations and effective masks for workers to help to deal with the disease. But the programme shows that although the Government has known that the standard mask used, the Martindale, is ineffective and was not designed for cotton dust, it is still in use.

Company halts world sales of arthritis drug, Shyama Perera and Penny Chorlton, *The Guardian*, August 6th, 1982.

The manufacturers of the arthritis drug Opren has suspended sales worldwide after widely publicised allegations about the deaths of patients and its side effects. The voluntary move by Eli Lilly of Indianapolis came after the Committee on Safety of Medicines (CSM) in London had suspended sales of the drug for three months, while 3,500 complaints received from doctors are investigated. In Washington, a congressional hearing heard that Lilly and a rival drug manufacturer, Pfizer, lied and made extravagant and unsubstantiated claims for their drugs, Opren and Feldene, when they were launched in America in a blaze of publicity three to four months ago. Both drugs have been available in Britain for 18 months. In suspending sales, Eli Lilly made it clear that it still believes Opren to be safe. The American equivalent of the CSM, the Food and Drugs Administration, is investigating 11 deaths associated with the drug, known in the US as Oralflex. When Opren was first marketed in 1980 it was launched under the slogan "The sign of success in arthritis." Its development had cost £10 million and taken over seven years. As well as relieving inflammation and pain it could check the underlying causes of rheumatoid and osteo-arthritis without the side effects of steroids. In Britain that promised a market of 6 million. Then came the reports of bizarre side effects, including regrowth of head hair in bald men, facial hair appearing on women and rapid nail growth. Sixty-one linked deaths were reported, most of them elderly people.

Congress finds FDA wanting, *Nature* Vol. 298, 12 August 1982.

Eli Lilly and Company has repeatedly failed to report adverse findings about drugs it was testing for marketing, according to Food and Drug Administration (FDA) documents made public. Sales of one of the drugs mentioned in the documents, Oralflex (benoxaprofen), were suspended in both Britain and the United States after a review of British data revealed 61 deaths associated with its use. The allegations against Lilly are spelled out in a series of internal FDA memoranda released by the House intergovernmental relations subcommittee, which was holding hearings on FDA's proposed streamlining of the new drug evaluation process. One of the most serious charges is that "data for benoxaprofen appear to have been deliberately withheld, thus biasing the NDA (new drug application) in favour of approval". The investigator who reached that conclusion, Dr Michael Hensley, recommended last September that FDA "consider prosecution of appropriate Lilly employees". Dr Hensley's investigation revealed in particular that 65 adverse effects that occurred during the clinical trials of Oralflex were not reported to FDA, even though they were apparently related to the drug, and were in Lilly's files when the application was made in December 1979. These effects were principally

photosensitivity and onycholysis (loosening of the fingernails), and all occurred after the "cut-off date" of November 1978 that Lilly had set on data that were to go into their application. The cut-off is apparently a usual procedure. But the Lilly employee in charge of the application, Dr H.A. Bartlett, did review the adverse effect reports from trials that continued after the "cut-off date", and included "serious" reactions in the application, according to a memorandum written by Dr Hensley on 16 September 1981. This memorandum then states that Dr Bartlett instructed an employee "not to report others (such as onycholysis and photosensitivity) which he allegedly felt were, because of their frequent occurrence, no longer alarming" (*sis*). In fact, the new data showed a sharp increase in the incidence of these side effects. A letter from Dr Marion Finkel, then associate director for new drug evaluation, to R.D. Wood, chairman of the board of Lilly, on 12 March this year charges that "the consequence was a biased presentation clearly more favourable to the drug than was warranted by the data". Lilly's answer is that FDA regulations simply do not require applications to include data on all adverse reactions observed after the cut-off date.

OSHA's New Thoughts on Cancer Policy, Marjorie Sun, *Science*, July 2nd 1982.

A top official at the Occupational Safety and Health Administration (OSHA) says that a chemical must be proven to be a human carcinogen before the agency will regulate it, a statement that flies in the face of established cancer risk policy within the federal government. OSHA deputy assistant secretary Mark Cowan wrote in a letter dated 13 May, 1982 to the director of the National Institute of Occupational Safety and Health (NIOSH), that "In order to promulgate a regulation, OSHA must not only find a substance to be carcinogenic to man but must demonstrate that the substance poses a significant risk to occupationally-exposed workers." Cowan's correspondence was a response to a letter from NIOSH director Donald Millar. Millar noted that the World Health Organization's International Agency for Research on Cancer judged last fall that formaldehyde should be considered a potential human carcinogen. But OSHA seems determined that it will not regulate the chemical, short of clear epidemiological evidence.

Risk Estimate Vanishes from Benzene Report, Marjorie Sun, *Science*, September 3rd, 1982.

In October 1981, a group of scientists meeting at the World Health Organization's cancer agency concluded that workers regularly exposed to small amounts of benzene might contract leukemia at three times the expected rate. The estimate would have had wide regulatory implications in the United States for the chemical industry and the 1 million workers currently exposed to benzene. But in August 1982, when the International Agency for Research on

Cancer (IARC) published a report on benzene based on the October meeting, the group's conclusion had vanished from print. The deletion of the estimate has drawn harsh criticism from many scientists, labour leaders, and Representative David Obey (D—Wisc.). They charge that National Cancer Institute (NCI) officials, after meeting with chemical industry representatives, pressured the international cancer agency to back off from quantitative risk assessment. The risk estimate calculated by the advisory group was derived from an extrapolation of human data. The publication of the risk estimate on benzene was important because it would have bolstered arguments in the United States to limit exposure to very low levels. In 1980, the U.S. Supreme Court rejected attempts by the Occupational Safety and Health Administration to regulate benzene below the current standard of 10 parts per million (ppm) in air, saying that the agency had not demonstrated significant risk. Labour leaders would have ammunition to reargue the need for benzene regulation, if a document were published bearing the imprimatur of IARC. In January 1982, representatives from the Shell Oil Company, Exxon Corporation, and Chemical Manufacturers Association held a meeting with NCI official Richard Adamson to complain that the risk estimate in the IARC draft was faulty partly because it did not state the limitations of the data and suffered from "procedural flaws." According to an internal memo written by Curtis Smith of Shell Oil, they met with Adamson "to solicit his support . . . Dr. Adamson understands the regulatory impact of risk assessment and does not believe that the IARC should be engaged in this activity." Two months later, Adamson wrote a letter to IARC director Lorenzo Tomatis, admonishing him to refrain from quantitative risk assessment, although he did not specifically mention the benzene case. In July, when the benzene report was published, it was apparent that Tomatis had expunged the estimate. Specifically, he deleted a calculation predicting that exposure over a life time to 10 ppm of benzene daily might result in 17 excess leukemia deaths per 1000 workers.

FDA to Reexamine Bendectin Data, Gina Kolata, *Science*, July 23rd 1982.

The Food and Drug Administration (FDA) has decided to take another look at all studies to date that might bear on the question of whether Bendectin causes birth defects. Bendectin is the only drug specifically approved for nausea and vomiting of pregnancy and it is taken by about 25 percent of all pregnant women in the USA. The FDA last looked at Bendectin studies in September 1980 at which time its panel of experts examined data from animal studies and 13 epidemiological studies and concluded that there is no demonstrated relation between the drug and birth defects. However, it is impossible to prove that any drug is harmless. The panel recognized a "residual uncertainty" about Bendectin's safety during pregnancy (*Science* 31 October 1980, p 518). Despite

the FDA's conclusions, a growing number of parents are convinced that Bendectin caused birth defects in their children. More than 100 lawsuits have been filed against Merrell-Dow. Bendectin's manufacturer, although the plaintiffs lost in the one case that did go to trial. Recently, public attention has been focused again on Bendectin as a result of newspaper stories indicating that there is new evidence which shows a strong link between Bendectin and birth defects. The FDA's decision to reexamine all the Bendectin data was prompted by a meeting on 8 April between FDA commissioner Arthur Hull Hayes, Surgeon General C. Everett Koop, Representative Doug Walgren (D—Pa.), and Harry Meyer, director of the National Center for Drugs and Biologics. Susan McFalls, a member of Walgren's staff, says the congressman is concerned by some new data that he believes may implicate Bendectin in birth defects.

Is penicillin fighting a losing battle against VD in Britain? *New Scientist*, August 12th, 1982.

The number of cases of gonorrhoea in the UK has shown a satisfactory decline in recent years — it fell from 65 917 in 1977 to 60 722 in 1980. This is probably due to vigorous British efforts to control venereal disease, involving tracing contacts and prompt treatment with penicillin. But a strain of bacteria that is resistant to penicillin has begun to take hold in this country and conventional treatments may become inadequate as a result (*British Medical Journal*, vol 285, p 337). This bacterium, penicillinase-producing *Neisseria gonorrhoeae* or PPNG, produces enzymes called β -lactamases that render penicillin ineffective. Allen McCutchan, Michael Adler and John Berrie, of the Middlesex Hospital Medical School and the Communicable Diseases Surveillance Centre in North London, attribute the evolution of this strain to the unsupervised use of antibiotics that is common in countries where the strain is now endemic (principally in West Africa and South-East Asia). The data collected showed that the number of cases of PPNG doubled every year since records began in 1977. But until 1981, twice as many infections were picked up abroad as were caught from a contact in the UK who had not herself (or himself) imported it. Then in 1981, 165 cases were caught from someone who had not caught it abroad, compared with 168 imported cases. The authors conclude that "endemic transmission on a large scale is occurring for the first time in Britain".

Poisoning is blamed for 'hysteria', *The Times*, August 18th 1982.

More than 400 insurance claims have been submitted after a medical investigation confirmed a trade union belief that 60 employees who collapsed at a Barnsley tennis ball factory were suffering from poisoning caused by a solvent, Toluene, used at the time in the manufacture of tennis balls. After the incident, in September 1980, at the Dunlop owned International Sports Company, mass hysteria was suggested as a probable diagnosis. The outbreak, which caused physical collapse, personality changes, impaired memory, and persistent depres-

sion, resulted in the closure of the factory for several weeks while extensive alterations were made to ventilation and extraction systems. Toluene has been abandoned in the manufacturing process. Although six months after the incident blood values had returned to normal, 20 months afterwards some patients still have persistent personality changes, particularly depression.

Hawaiian Milk Problems Stir Little Action, R. Jeffery Smith, *Science*, August 13th 1982.

Federal regulators recently decided not to intervene in a continuing dispute over the contamination of Hawaiian milk by heptachlor, a carcinogenic pesticide. The contamination was discovered in January by state officials, who delayed an announcement for several months and — in the eyes of some critics — worried more about the condition of the dairy industry than the health of the state's population. "We believe that the Hawaii Department of Agriculture is doing an excellent job in investigating the Hawaii heptachlor milk contamination problem, and that they and the state Department of Health have the situation well under control," declared Edwin Johnson, EPA's director of pesticide programs, in a June letter received by *Science*. Johnson also informed the Food and Drug Administration (FDA) that there was no reason to lower the federal limit on heptachlor in milk, thereby diminishing the continued exposure of Hawaii's citizenry. The FDA, citing this recommendation, told the state's health officials that the current limit (0.3 part per million) seems perfectly adequate, even though it is twice the limit already established by the World Health Organization. Asked how he came to this conclusion, Johnson said that it was largely "intuitive" and "based on a quick cut." He noted that virtually everyone — in Hawaii and elsewhere — already has residues of heptachlor in their bodies. Consequently, he said, additional short-term exposure poses only a minor, incremental risk. In 1976, when most uses of heptachlor were banned, EPA used the same logic to reach a different conclusion. Russell Train, then EPA's administrator, concluded in a heptachlor suspension notice that "although any single component of human exposure may not appear to be significant, it alone poses a cancer hazard to certain of the more susceptible individuals and together with the several other components of human exposure poses a serious cancer threat." This view apparently no longer prevails in the federal government. In his letter to FDA, Johnson said that it may be appropriate to lower the exposure limit "as heptachlor epoxide residues continue to decline in Hawaii cattle and their milk"; in other words, when local dairies would not suffer adverse financial impact.

Toxic damage, *New Scientist*, July 15th 1982.

Chromosome damage has been discovered among people living near a waste dump at Stouffville near Toronto. The landfill site was once a tip for toxic chemicals. Five of the six people who lived closest to the site have "abnormal chromosome damage", according to a private study commissioned by local residents. Avery Sandberg, one of the staff of the

Roswell Park Cancer Institute of Buffalo, New York, which carried out the blood tests in February, says that toxins caused the chromosome damage. But, he says, "I don't know why it was there. All I can tell you is that it is not normal." In 252 homes within 2 kilometres of the dump, there have been 149 deaths and serious illnesses that have raised local suspicions.

'Unfit' meat on way to Lebanon, Barrie Penrose and Simon Freeman, *The Sunday Times*, August 29th, 1982.

Refugees in Lebanon will be tucking into a selection of Wall's canned meat pies, but they are unlikely to be told that they were hastily taken off the British market by Wall's 18 months ago — and were originally destined either to be destroyed or sold as pet food. The extraordinary saga began in January last year when Wall's sister company, Mattessons, which processes meat products under well known brand names, discovered that horsemeat had been mixed with beef at its plant. Mattessons blamed unscrupulous meat dealers, apologised to its customers and withdrew 200 tons of canned meats from the shops. Naturally the company did its best to reassure the public: "As far as we know, the meat was not unfit but we thought we had better warn people," said a spokesman. Privately, however, the company was told by health inspectors that some of the meat had probably come from knackers' yards. Mattessons then debated whether to destroy the 200 tons or sell it as pet food. It chose the latter course. Biggest customer for the pies was David Topping, a meat trader who runs a company called Kingswood marketing in Burgh Heath, Surrey. Topping told Mattessons he had arranged a deal with the Czechs. British Department of Health inspectors had been closely monitoring the progress of the 200 tons, pointing out that the meat could not be eaten in Britain or within the EEC. Helpfully, the department even gave certificates for 288,000 cans stating the contents could be for human consumption as long as it was outside the United Kingdom and western Europe. Late in August Owen learned to his horror that the meat was bound for Cyprus. Mattessons now fears that the pies might even, in time, find their way back to Britain. Privately, health officials say that documents show that some of the meat is going to Lebanon for distribution to refugees. They are outraged that the pies should now be going to unsuspecting people.

How an American move to take the fuss out of lead backfired, Des Wilson, *The Guardian*, September 23rd 1982.

As part of a programme to relieve his industrial friends of restrictive regulations, President Reagan appointed an environmental hard-liner, Ann Gorsuch, as administrator of the Environmental Protection Agency, who promised oil refiners and the lead industry that she would, "drastically revise or abolish" the restrictions on lead in petrol for pre 1975 cars (since that date, all cars have been manufactured to run on lead-free petrol). Instead, the EPA

has ended up with fresh regulations to increase limits on lead in petrol and has been so determined about their enforcement that it withstood three weeks of pressure from the White House to reconsider. Hearings revealed that the administrator and her staff had private conferences with the petroleum and lead industries on 32 separate occasions between May 1981 and March 1982 without ever meeting environmentalists or up-dating information on the health effect of lead. On one occasion the administrator was said to have implied that if a company wanted to break the regulations, she would not enforce them. The influential syndicated columnist, Jack Anderson, represented an almost unanimous medical viewpoint: "Incredibly the Reagan administration appears willing to risk the health of hundreds of thousands of anonymous preschoolers, just so the oil companies can make a few bucks." Belatedly, the Environmental Protection Agency called in the evidence on sources of lead pollution, and on the health hazard involved. In a remarkable document filed in the Federal Register, the EPA has now reviewed all the evidence it received and stated: "The majority of the comments emphatically rejected the proposition that lead was no longer a public health problem." It concluded that "protection of public health and welfare demands that all reasonable steps be taken to eliminate lead from the environment." Two questions arise in the British context. First, if a United States administration unsympathetic to the environmental point of view nevertheless decided on the medical and scientific evidence to strengthen the regulations, does that not make even more untenable the position of obstinate British ministers who claim they have done enough? Second, do we need an institution like the Environmental Protection Agency in this country? In the United States, the system has been seen to work. In Britain, at the moment, our system clearly has not.

Lead risk to unborn children, Pearce Wright, *The Times*, September 3rd, 1982.

The concentration of lead in the blood of people living in urban areas in Britain is often above the amount at which damage can be transmitted to an unborn child. That conclusion is contained in a study by Mrs Arthur Wynn for the Campaign for Lead-Free Air and included among evidence to the Royal Commission of Environmental Pollution. Mr and Mrs Wynn, who have done research for the past 11 years into causes and prevention of handicap in early pregnancy, also recommended as essential a balanced daily diet providing iron, calcium magnesium, phosphorous, zinc and vitamin C to avoid susceptibility to lead damage. Mr Wynn, a physiologist and former government scientific officer, said that lead is particularly dangerous when there is a confluence of factors, such as contamination by the metal when the mother is in a poor state of health or receiving an inadequate diet. The conclusions about damage in early pregnancy are based on animal studies showing that contamination before mating

led to offspring with reduced brain weight, reduced brain activity, reduced visual discrimination and kidney damage and delayed onset of puberty. The Wynns report levels of lead in the blood of men and women in Islington, London, and Glasgow, in the range of 0.1 to 0.3 parts per million, found to be dangerous to reproduction in animals.

Lead—free petrol pledge, Hugh Clayton, *The Times*, September 10th 1982.

The next Labour Government will eliminate lead from petrol without forcing motorists to change their cars, says Mr Gerald Kaufman, spokesman on the environment. "When, as I trust, I walk into the Department of the Environment in the next 18 months, I do not expect to be presented with blank sheets of paper," Mr Kaufman said at a Press conference organized in London by the Campaign for Lead-Free Air (Clear). Abolition had been adopted by the Shadow Cabinet, the national executive of the Labour Party and the party conference, and it would definitely be carried out. "I make it clear," Mr Kaufman said, "We are going to do it." Mr Des Wilson, chairman of Clear, said that 35 Conservative MPs supported a ban on lead in petrol. The Government, however, refused to eliminate it from petrol. Clear was about to start a survey of lead in soil and dust in schools while a survey of local councils throughout Britain showed that 85 of the 100 which had voted on lead wanted to ban it. Dr Robin Russell-Jones, deputy chairman of Clear, said that vegetables grown on allotments with lead in the soil could contain five times as much of the metal as the legal ceiling for lead in tinned food.

Asbestos

World insurers pay out £58,000m for asbestosis, Philip Robinson, *The Times*, August 8th 1982.

The killer disease asbestosis is estimated to have cost the world's insurance industry about \$100,000m (£58,000m). Most of the money has gone in fees to lawyers and doctors and the rest to victims as compensation. The world's largest insurance market, Lloyd's of London, refused to say how much of the total sum it is likely to pay. But a multi-million dollar American company, Manville Corporation, has filed for bankruptcy because of thousands of lawsuits demanding compensation for asbestos-related health problems. Mr Richard Ballantyne, chairman of Lloyd's underwriter's Association under which asbestosis business is written, said "How much it will actually cost in my opinion is impossible to quantify. Policy wordings have been construed in different ways, most of them to the detriment of insurers. One thing is certain and that is the fee bills will be enormous. For instance, in respect of one of the assureds, for every \$1.5m being paid in indemnity, \$2.5 is being paid in fees."

Shock reports on UK asbestos firm, Martin Bailey, *The Observer*, 15th August, 1982.

The British asbestos company Turner & Newall exposed its Swaziland workers to dust levels more than 25 times above the safety standard allowed by company policy, according to an unpublished report obtained by *The Observer*. The study reveals that dust levels at the Havelock mine and mill, employing 2,100 people, were above 50 fibres per cu cm, in some areas until 1976. Although they have since decreased, they are still above the company's safety standard in parts of the plants. The Havelock study, prepared by the UK Medical Research Council, also reveals that nearly a third of the workers sampled in 1978 had developed asbestosis. These new revelations about T & N's safety standards are likely to put further pressure on the company to reduce dust levels. Its shares already dropped in value by £11 million in two weeks because of mounting concern of litigation from asbestos victims. Dr Bradley, who was Havelock's doctor throughout the 1970s, has admitted to *The Observer* that 'although there was no regular monitoring, dust levels were recorded on an occasional basis.' These figures, he said, showed that white asbestos dust levels in some parts of the mill exceeded 50 fibres per cu cm. Even outside the mill, conditions were also dangerous. Until 1970 asbestos was packed into hessian sacks and transported on a 13 miles aerial ropeway, 'which resulted in the workers on the ropeway receiving a high dust exposure.' A T & N publicity photograph shows nearly a hundred children playing outside the mine school, a hundred yards from the mill and its waste tips. Conditions at Havelock have contradicted T & N's public stand. Mr Patrick Griggith, then the company's chairman, told the shareholders in the 1976 annual report: 'It is our policy to apply the current British (safety) standard. . in our factories throughout the world.' The UK legal limit, introduced in 1969, is 2 fibres per cu cm, which will shortly be reduced to 1 fibre. Yet according to the study, the level at Havelock was 25 times this figure in 1976, and levels of exposure have 'gradually been decreasing' since then. No figures of post-1976 dust levels are given in the Cardiff study. But Dr Bradley says that when he left Havelock two years ago, the maximum level at the mill was 15 fibres.

Asbestos firm back-pedals on cancer statistics, Angela Singer, *The Guardian*, August 18th 1982.

Britain's largest asbestos company, Turner and Newall, has substantially revised several of its earlier statements on the numbers of lung cancer and asbestosis cases at the company's Rochdale factory. These changes come in reply to a series of questions from the General and Municipal Workers Union, following disclosures in the Yorkshire Television documentary, *Alice: A Fight for Life*, shown in July. The company has told the union that a statement it made in 1978, that deaths from lung cancer of Rochdale factory personnel did not "differ significantly from the national average," was

incorrect. Deaths from lung cancer at the factory were found in a 1977 study by an Oxford researcher to be twice the expected rate for the general population. The company has conceded that asbestosis has been recorded among employees in the factory's weaving shed, although it told the Simpson Committee, the Government's inquiry into asbestos, that disease was nil. It has retracted its statement to the committee that none of the 48 cases of mesothelioma could be ascribed to slight exposure to asbestos. Turner and Newall has confirmed that dust levels in the Fotex department, heralded by the company as a safe, dust free process, have been as high as 11 million fibres per cubic metre of air — 11 times the maximum level recommended by the Health and Safety Executive.

Asbestos dust levels to be cut, David Nicholson-Lord, *The Times*, August 25th, 1982.

The Health and Safety Commission has agreed to halve asbestos dust levels permitted in factories from the beginning of the next year. But after opposition from industry it rejected proposals to reduce the levels further. Instead, it has decided to set up a working party to examine the engineering and design difficulties in the way of a further reduction. That is expected to be made up of companies and unions in the asbestos industry and should report early next year, although solutions are likely to take longer to implement. Among the proposals put to the commission was a reduction to a level of half a fibre per millilitre. But industry representatives apparently took the view that present exhaust ventilation systems would have difficulty meeting this. According to the commission, nine-tenths of the asbestos industry now works to the one-fibre standard proposed by the Advisory Committee on Asbestos in October 1979. But most of the committee's 41 recommendations have not yet been implemented.

T & N loses £4.5 million midway, *The Guardian*, September 3rd 1982.

Embattled Turner & Newall, the building and motor components supplier which uses asbestos as a basic material in nearly two-thirds of its output, sees no sign of the upturn in demand that is needed to restore its financial fortunes. Provisions against claims from asbestosis sufferers and reverses in the Zimbabwe mines resulted in a £4.5 million loss in the first half of the year. After tax and a nominal dividend another £12 million was lopped off reserves following last year's heavy redundancy provisions. The pre-tax loss represents a £13 million turnaround from last year's £8.5 million profit for the period. Zimbabwe featured prominently then, but the slide in demand and compulsory over-production by the asbestos mines wiped out earnings from that source. Provisions against asbestos-related disease claims, mainly in the United States, and primarily representing small settlements, were up by three-quarters to £3.1 million.